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Puma concolor, Puma

Errata version

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If you see any errors or have any questions or suggestions on what is shown in this document, please provide us with feedback so that we can correct or extend the information provided.

Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Mammalia	Carnivora	Felidae

Taxon Name: *Puma concolor* (Linnaeus, 1771)

Synonym(s):

• Felis concolor Linnaeus, 1771

Common Name(s):

• English: Puma, Cougar, Deer Tiger, Mountain Lion, Red Tiger

• Spanish: León Americano, León Bayo, León Colorado, León De Montaña, Mitzli, Onza Bermeja

Taxonomic Notes:

The taxonomy is currently under review by the IUCN SSC Cat Specialist Group. While 32 subspecies have been classically described, on the basis of genetic analysis Culver *et al.* (2000) suggest six subspecies as follows:

P. c. cougar: North America

P. c. costaricensis: Central America

P. c. capricornensis: eastern South America
P. c. concolor: northern South America
P. c. cabrerae: central South America
P. c. puma: southern South America.

Assessment Information

Red List Category & Criteria: Least Concern ver 3.1

Year Published: 2015

Date Assessed: April 17, 2014

Justification:

This species is listed as Least Concern because it is one of the most widely-distributed mammals in the Western Hemisphere. Although it has been extirpated from its former range in midwestern and eastern North America (Nowell and Jackson 1996), it is attempting to recolonize this region (Thompson and Jenks 2010, LaRue *et al.* 2012) and populations are healthy enough for regulated harvest in western North America. However, it is considered to be declining elsewhere in its range, and as a large carnivore intricately linked to other wildlife and habitat associations, from a social and political perspective its conservation and management presents numerous challenges.

Previously Published Red List Assessments

2008 - Least Concern (LC)

http://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T18868A8650385.en

2002 – Near Threatened (NT)

1996 – Lower Risk/least concern (LR/Ic)

Geographic Range

Range Description:

The geographic range of the Puma is the largest of any terrestrial mammal in the Western Hemisphere (Sunquist and Sunquist 2002), from Canada through the US, Central and South America to the southern tip of Chile. While the Puma is an adaptable cat, being found in every major habitat type of the Americas, including the high Andes (5,800 m asl in southern Peru; Sunquist and Sunquist 2002), it was eliminated from the entire eastern half of North America within 200 years following European colonization (Nowell and Jackson 1996). A remnant Endangered supopulation persists in Florida. Recent confirmations and suitable habitat in the Midwestern U.S. indicate attempts at recolonization (LaRue and Nielsen 2011, LaRue *et al.* 2012).

Country Occurrence:

Native: Argentina; Belize; Bolivia, Plurinational States of; Brazil; Canada; Chile; Colombia; Costa Rica; Ecuador; El Salvador; French Guiana; Guatemala; Guyana; Honduras; Mexico; Nicaragua; Panama; Paraguay; Peru; Suriname; United States; Venezuela, Bolivarian Republic of

Distribution Map

Puma concolor



Population

The Canadian population was roughly estimated at 3,500-5,000 and the western US population at 10,000 in the early 1990s (Nowell and Jackson 1996). The population of Central and South America is likely much higher, although it is unclear how abundant Pumas are in the dense rainforest of the Amazon basin (Nowell and Jackson 1996). The Florida subpopulation, numbering 100-180, is isolated, and has been supplemented by a reintroduction of pumas from Texas (Sunquist and Sunquist 2002, Florida Fish and Wildlife Conservation Commission 2014). In Brazil it is considered Near Threatened but subspecies outside the Amazon basic are considered Vulnerable (Machado *et al.* 2005). It is also considered Near Threatened in Peru (Inrena 2006), Argentina (Diaz and Ojeda 2000) and Colombia (Rodriguez-Mahecha *et al.* 2006), and Data Deficient (inadequately known) in Chile (CONAMA 2005).

Density estimates include:

- Utah, US: 0.3-0.5/100 km² (Hemker et al. 1984)
- Washington, US: 5.03/100 km² (Robinson et al. 2008)
- Idaho, US: 0.77-1.04/100 km² (Laundre and Clark 2003)
- Peru: 2.4/100 km² (Janson and Emmons 1990)
- Patagonia: 6/100 km² (Franklin et al. 1999)
- Pantanal 4.4/100 km² (Crawshaw and Quigley unpubl. in Nowell and Jackson 1996)
- Belize 2-5/100 km² (Kelly et al. 2008)
- Argentina 0.5-0.8/100 km² (Kelly et al. 2008)
- Bolivia 5-8/100 km2 (Kelly et al. 2008)
- West Mexico 3-5/100 km² (Nunez et al. 1998)

Current Population Trend: Decreasing

Habitat and Ecology (see Appendix for additional information)

This species is found in a broad range of habitats, in all forest types, as well as lowland and montane desert. Several studies have shown that habitat with dense understory vegetation is preferred, however, Pumas can live in very open habitats with only a minimum of vegetative cover (Nowell and Jackson 1996). Pumas co-occur with Jaguars in much of their Latin American range, and may favour more open habitats than their larger competitor, although both can be found in dense forest (Sunquist and Sunquist 2002).

Pumas are capable of taking large prey, but when available small to medium-sized prey are more important in their diet (in tropical portions of the range). This is true of wild prey as well as livestock (IUCN Cats Red List workshop 2007). In North America, deer make up 60-80% of the Puma's diet, and the mean weight of prey taken is 39-48 kg. In Florida, however, where deer numbers are low, Pumas take smaller prey including feral pigs, raccoons and armadillos, and deer account for only about 1/3 of the diet (Sunquist and Sunquist 2002).

Home range sizes of Pumas vary considerably across their geographic distribution, and the smallest ranges tend to occur in areas where prey densities are high and prey are not migratory (Sunquist and Sunquist 2002). In North America, home range sizes ranged from 32-1,031 km² (Lindzey *et al.* 1987).

Systems: Terrestrial

Use and Trade

Pumas are legally hunted in many western US states, although hunting was banned by popular referendum in California in 1990.

Threats (see Appendix for additional information)

Pumas are threatened by habitat loss and fragmentation, and poaching of their wild prey base. They are persecuted across their range by retaliatory hunting due to livestock depredation, and due to fear that they pose a threat to human life (IUCN Cats Red List workshop 2007). Pumas have killed a number of people in western Canada and the US in recent years. Pumas are legally hunted in many western US states, although hunting was banned by popular referendum in California in 1990. Road kills are the principal cause of mortality in the endangered Florida Panther subpopulation, and heavily travelled roads are a major barrier to Puma movements and dispersal (Sunquist and Sunquist 2002).

Conservation Actions (see Appendix for additional information)

It is included in CITES Appendix II and the eastern and Central American subspecies (*P. c. coryi, costaricensis* and *cougar*) on Appendix I. This species is protected across much of its range, with hunting prohibited in most of Argentina, and all of Brazil, Bolivia, Chile, Colombia, Costa Rica, French Guiana, Guatemala, Honduras, Nicaragua, Panama, Paraguay, Suriname, Venezuela and Uruguay, and hunting regulations in place in Canada, Mexico, Peru and the United States (Nowell and Jackson 1996).

There is a need for the implementation of programs to mitigate conflict resolution for livestock depredation and to study the real effect of Puma vs. Jaguar depredation on livestock (IUCN Cats Red List workshop 2007). Puma occasionally kill humans, especially in North America.

Credits

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Bibliography

CONAMA. 2005. Conselho Nacional do Meio Ambiente - Resolução. CONAMA.

Culver, M., Johnson, W.E., Pecon-Slattery, J. and O'Brien, S.J. 2000. Genomic ancestry of the American puma (*Puma concolor*). *Journal of Heredity* 91: 186-197.

Díaz, G.B. and Ojeda, R.A. (eds). 2000. *Libro rojo: mamíferos amenazados de la Argentina*. pp. 106. Soc. Argentina para el Estudio de los Mamíferos, Buenos Aires.

Florida Fish and Wildlife Conservation Commission. 2014. Annual report on the research and management of Florida panthers: 2013-2014. Fish and Wildlife Research Institute & Division of Habitat and Species Conservation, Naples, Florida, USA.

Franklin, W.L., Johnson, W.E., Sarno, R.J. and Iriarte, J.A. 1999. Ecology of the Patagonia puma *Felis concolor patagonica* in southern Chile. *Biological Conservation* 90: 33-40.

Hemker, T.P., Lindzey, F.G. and Ackerman, B.B. 1984. Population characteristics and movement patterns of cougars in southern Utah. *Journal of Wildlife Management* 48: 1275-1284.

INSTITUTO NACIONAL DE RECURSOS NATURALES (INRENA). 2006. Plan Nacional de Reforestacion Perù 2005 - 2024. Lima. Perù.

IUCN. 2015. The IUCN Red List of Threatened Species. Version 2015-4. Available at: www.iucnredlist.org. (Accessed: 19 November 2015).

IUCN. 2016. The IUCN Red List of Threatened Species. Version 2016-1. Available at: www.iucnredlist.org. (Accessed: 30 June 2016).

Janson, C.H. and Emmons, L.H. 1990. Ecological structure of the nonflying mammal community at Cocha Cashu Biological Station, Manu National Park, Peru. In: A.H. Gentry (ed.), *Four neotropical forests*, pp. 314-338. Yale University Press, New Haven, Connecticut, USA.

Kelly, M.J., Noss, A.J., Di Bitetti, M., Maffei, L., Arispe, L.R., Paviolo, A., De Angelo, C.D. and Di Blanco, Y.E. 2008. Estimating puma densities from camera trapping across three study sites: Bolivia, Argentina, and Belize. *Journal of Mammalogy* 89(2): 408-418.

LaRue, M.A. and Nielsen, C.K. 2011. Modelling potential habitat for cougars in midwestern North America. *Ecological Modelling* 222: 897-900.

LaRue, M.L., Nielsen, C.K., Dowling, M., Miller, K., Wilson, B., Shaw, H. and Anderson, C.R. Jr. 2012. Cougars are recolonizing the Midwest: Analysis of cougar confirmations during 1990-2008. *Journal of Wildlife Management* 76: 1364-1369.

Laundre, J. and Clark, T.W. 2003. Managing puma hunting in the western United States: Through a metapopulation approach. *Animal Conservation* 6: 159-170.

Lindzey, F., Novak, M., Baker, J., Obbard, M. and Malloch, B. 1987. Mountain Lion. In: M. Novak, J. A. Baker, M. E. Obbard and B. Malloch (eds), *Wild furbearer management and conservation in North America*, pp. 656. Ontario Ministry of Natural Resources and the Ontario Trappers Association, Ontario, Canada, Toronto.

Machado, A.B.M., Drummond, G.M. and Martins, C.S. 2005. Lista da Fauna Brasileira Ameaçada de Extinção: Incluindo as Espécies Quase Ameaçadas e Deficientes em Dados. Fundação Biodiversitas, Belo Horizonte, Brazil.

Nowell, K. and Jackson, P. 1996. *Wild Cats. Status Survey and Conservation Action Plan.* IUCN/SSC Cat Specialist Group, Gland, Switzerland and Cambridge, UK.

Nunez, R., Miller, B. and Lindzey, F. 1998. Ecology of Jaguars and Pumas in Jalisco, Mexico.

Robinson, H.S., Wielgus, R.B., Cooley, H.S and Cooley, S.W. 2008. Sink populations in carnivore management: cougar demography and immigration in a hunted population. *Ecological Applications* 18: 1028-1037.

Rodriguez-Mahecha, J.V., Alberico, M., Trujillo, F. and Jorgenson, J. 2006. *Libro Rojo de los Mamíferos de Colombia. Serie Libros Rojos de Especies Amenazadas de Colombia*. Conservación Internacional Colombia & Ministerio de Ambiente, vivienda y Desarrollo Territorial, Bogota, Colombia.

Sunquist, M. and Sunquist, F. 2002. Wild Cats of the World. University of Chicago Press.

Thompson, D.J. and Jenks, J.A. 2010. Dispersal movements of subadult cougars from the Black Hills: the notion of range expansion and recolonization. *Ecosphere* 1: 1-11.

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External Resources

For Images and External Links to Additional Information, please see the Red List website.

Appendix

Habitats

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Habitat	Season	Suitability	Major Importance?
8. Desert -> 8.2. Desert - Temperate	-	Suitable	-
4. Grassland -> 4.7. Grassland - Subtropical/Tropical High Altitude	-	Suitable	-
4. Grassland -> 4.6. Grassland - Subtropical/Tropical Seasonally Wet/Flooded	-	Suitable	-
4. Grassland -> 4.5. Grassland - Subtropical/Tropical Dry	-	Suitable	-
4. Grassland -> 4.4. Grassland - Temperate	-	Suitable	-
3. Shrubland -> 3.8. Shrubland - Mediterranean-type Shrubby Vegetation	=	Suitable	-
3. Shrubland -> 3.7. Shrubland - Subtropical/Tropical High Altitude	=	Suitable	-
3. Shrubland -> 3.6. Shrubland - Subtropical/Tropical Moist	-	Suitable	-
3. Shrubland -> 3.5. Shrubland - Subtropical/Tropical Dry	-	Suitable	-
3. Shrubland -> 3.4. Shrubland - Temperate	-	Suitable	-
3. Shrubland -> 3.3. Shrubland - Boreal	=	Suitable	-
2. Savanna -> 2.2. Savanna - Moist	-	Suitable	-
2. Savanna -> 2.1. Savanna - Dry	-	Suitable	-
1. Forest -> 1.9. Forest - Subtropical/Tropical Moist Montane	-	Suitable	-
1. Forest -> 1.6. Forest - Subtropical/Tropical Moist Lowland	-	Suitable	-
1. Forest -> 1.5. Forest - Subtropical/Tropical Dry	-	Suitable	-
1. Forest -> 1.4. Forest - Temperate	-	Suitable	-
1. Forest -> 1.1. Forest - Boreal	-	Suitable	-

Threats

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Threat	Timing	Scope	Severity	Impact Score
1. Residential & commercial development -> 1.1. Housing & urban areas	Ongoing	-	-	-
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion		
		1. Ecosystem stresses -> 1.2. Ecosystem degradation		ystem degradation
1. Residential & commercial development -> 1.2. Commercial & industrial areas	Ongoing	-	-	-

	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion		
		1. Ecosystem stresses -> 1.2. Ecosystem degradation	1	
2. Agriculture & aquaculture -> 2.1. Annual & perennial non-timber crops -> 2.1.3. Agro-industry farming	Ongoing			
	Stresses:	 Ecosystem stresses -> 1.1. Ecosystem conversion Ecosystem stresses -> 1.2. Ecosystem degradation 	า	
2. Agriculture & aquaculture -> 2.2. Wood & pulp plantations -> 2.2.2. Agro-industry plantations	Ongoing			
	Stresses:	 Ecosystem stresses -> 1.1. Ecosystem conversion Ecosystem stresses -> 1.2. Ecosystem degradation 	า	
2. Agriculture & aquaculture -> 2.3. Livestock farming & ranching -> 2.3.3. Agro-industry grazing, ranching or farming	Ongoing			
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion		
		1. Ecosystem stresses -> 1.2. Ecosystem degradation	1	
4. Transportation & service corridors -> 4.1. Roads & railroads	Ongoing	-		
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion		
		1. Ecosystem stresses -> 1.2. Ecosystem degradation	n	
		2. Species Stresses -> 2.1. Species mortality		
5. Biological resource use -> 5.1. Hunting & trapping terrestrial animals -> 5.1.1. Intentional use (species is the target)	Ongoing	-		
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
5. Biological resource use -> 5.1. Hunting & trapping terrestrial animals -> 5.1.2. Unintentional effects (species is not the target)	Ongoing			
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
5. Biological resource use -> 5.1. Hunting & trapping terrestrial animals -> 5.1.3. Persecution/control	Ongoing	-		
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
5. Biological resource use -> 5.3. Logging & wood harvesting -> 5.3.5. Motivation Unknown/Unrecorded	Ongoing			
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation	1	
6. Human intrusions & disturbance -> 6.2. War, civil unrest & military exercises	Ongoing			
	Stresses:	2. Species Stresses -> 2.2. Species disturbance		
7. Natural system modifications -> 7.1. Fire & fire suppression -> 7.1.3. Trend Unknown/Unrecorded	Ongoing			
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation	1	
7. Natural system modifications -> 7.2. Dams & water management/use -> 7.2.11. Dams (size unknown)	Ongoing			
	Stresses:	 Ecosystem stresses -> 1.1. Ecosystem conversion Ecosystem stresses -> 1.2. Ecosystem degradation 		
8. Invasive and other problematic species, genes & diseases -> 8.2. Problematic native species/diseases	Ongoing			

Conservation Actions in Place

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Conservation Actions in Place
In-Place Research, Monitoring and Planning
Systematic monitoring scheme: Yes
In-Place Land/Water Protection and Management
Occur in at least one PA: Yes
In-Place Species Management
Harvest management plan: Yes
Successfully reintroduced or introduced beningly: Yes
Subject to ex-situ conservation: Yes
In-Place Education
Included in international legislation: Yes

Conservation Actions Needed

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Subject to any international management/trade controls: Yes

Conservation Actions Needed
1. Land/water protection -> 1.1. Site/area protection
1. Land/water protection -> 1.2. Resource & habitat protection
2. Land/water management -> 2.1. Site/area management
2. Land/water management -> 2.3. Habitat & natural process restoration
3. Species management -> 3.1. Species management -> 3.1.1. Harvest management
3. Species management -> 3.2. Species recovery
3. Species management -> 3.3. Species re-introduction -> 3.3.1. Reintroduction
4. Education & awareness -> 4.3. Awareness & communications
5. Law & policy -> 5.1. Legislation -> 5.1.2. National level
5. Law & policy -> 5.1. Legislation -> 5.1.3. Sub-national level
5. Law & policy -> 5.4. Compliance and enforcement -> 5.4.2. National level
5. Law & policy -> 5.4. Compliance and enforcement -> 5.4.3. Sub-national level

Research Needed

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Research Needed	
1. Research -> 1.1. Taxonomy	
1. Research -> 1.2. Population size, distribution & trends	
1. Research -> 1.3. Life history & ecology	
1. Research -> 1.5. Threats	
1. Research -> 1.6. Actions	
2. Conservation Planning -> 2.1. Species Action/Recovery Plan	
3. Monitoring -> 3.1. Population trends	

Additional Data Fields

Distribution	
Lower elevation limit (m): 0	
Upper elevation limit (m): 5800	
Population	
Population severely fragmented: No	

Errata

Errata reason: Added missing Bibliography references for INRENA (2006) and CONAMA (2005) which

were cited in the text.

The IUCN Red List Partnership



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